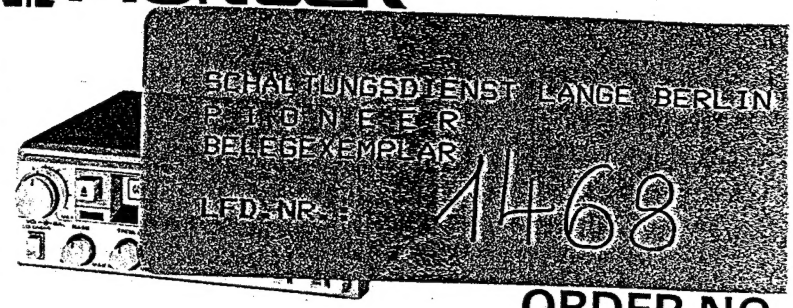
P 206

Service Manual

PIONEER



The photo shows the model KP-212G.

ORDER NO.
CRT-326-0

COMPONENT CAR STEREO CASSETTE DECK

KP-313G E
KP-212G E

NOTE:
For cassette mechanism, refer to the following Service Manuals (Cassette mechanism unit).

KP-313G/E→CX-146/F (CRT-324)
KP-212G/E→CX-147/B (CRT-325)

SPECIFICATIONS

General

Power source . . . . . DC 14.4V (10.8∼15.6V allowable)
Grounding system . . . . . Negative type
Dimensions . . . . . 150(W)×50(H)×134(D)mm
Weight 1.2kg
Tone controls (bass) . . . . . ±10 dB (100Hz)
(treble) . . . . . ±10 dB (10kHz)
Loudness contour . . . . . +12 dB (100Hz), +4 dB (10kHz) (volume: −30 dB)
Maximum output level 200mV
Output impedance 1kΩ

Tape player

Tape . . . . . Compact cassette tape (C-30∼C-90)
Tape speed . . . . . 4.76cm/sec. (+0.19cm/sec. −0.05cm/sec.)
Fast forward/rewind time . . . . . Approx. 100 sec. for C-60
Wow & flutter . . . . . 0.09% (WRMS)
Frequency response . . . . . Metal: 30∼18,000Hz (±3 dB)
Normal: 30∼15,000Hz (±3 dB)
Stereo separation . . . . . 45 dB
Signal-to-noise ratio . . . . . 55 dB (IEC-A network)

Note:
Specifications and the design are subject to possible modification without notice due to improvements.

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
PIONEER ELECTRONICS [USA] INC. 1925 E. Dominguez St., Long Beach, California 90810 U.S.A.
PIONEER ELECTRONIC [EUROPE] N.V. Keetberglaan 1, 2740 Beveren, Belgium
PIONEER ELECTRONICS AUSTRALIA PTY. LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia
EK© NOV. 1982 Printed in Japan

1. PARTS LOCATION

- *For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.*
  ★★: GENERALLY MOVES FASTER THAN ★.
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.

• **KP-313G**

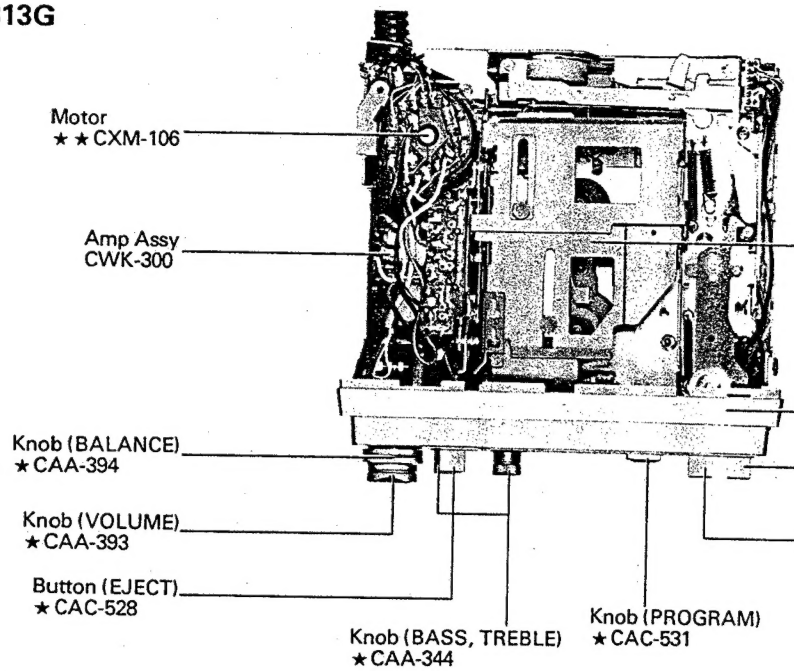


Fig. 1

• **KP-212G**

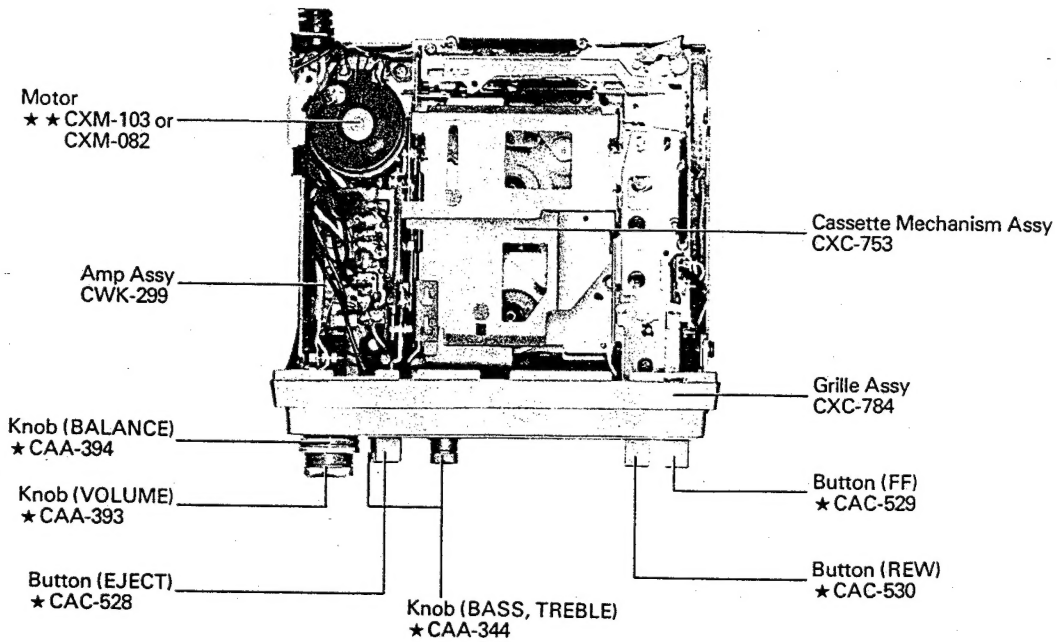
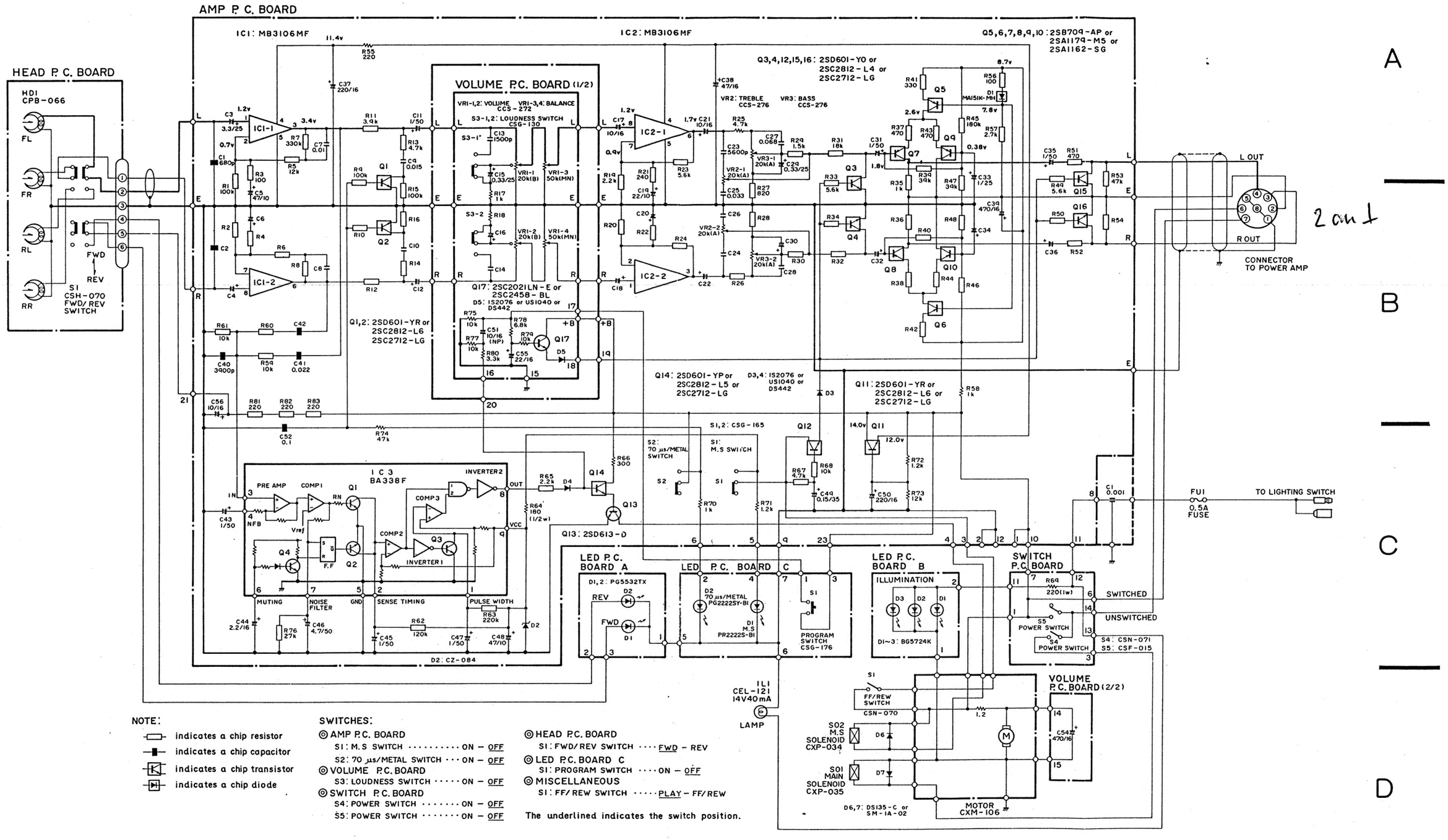


Fig. 2

3. SCHEMATIC CIRCUIT DIAGRAM (KP-313G)



NOTE:

- indicates a chip resistor
- indicates a chip capacitor
- indicates a chip transistor
- indicates a chip diode

SWITCHES:

◎ AMP P.C. BOARD
- S1: M.S SWITCH ····· ON – OFF
- S2: 70 µs/METAL SWITCH ··· ON – OFF

◎ VOLUME P.C. BOARD
- S3: LOUDNESS SWITCH ····· ON – OFF

◎ SWITCH P.C. BOARD
- S4: POWER SWITCH ····· ON – OFF
- S5: POWER SWITCH ····· ON – OFF

◎ HEAD P.C. BOARD
- S1: FWD/REV SWITCH ···· FWD – REV

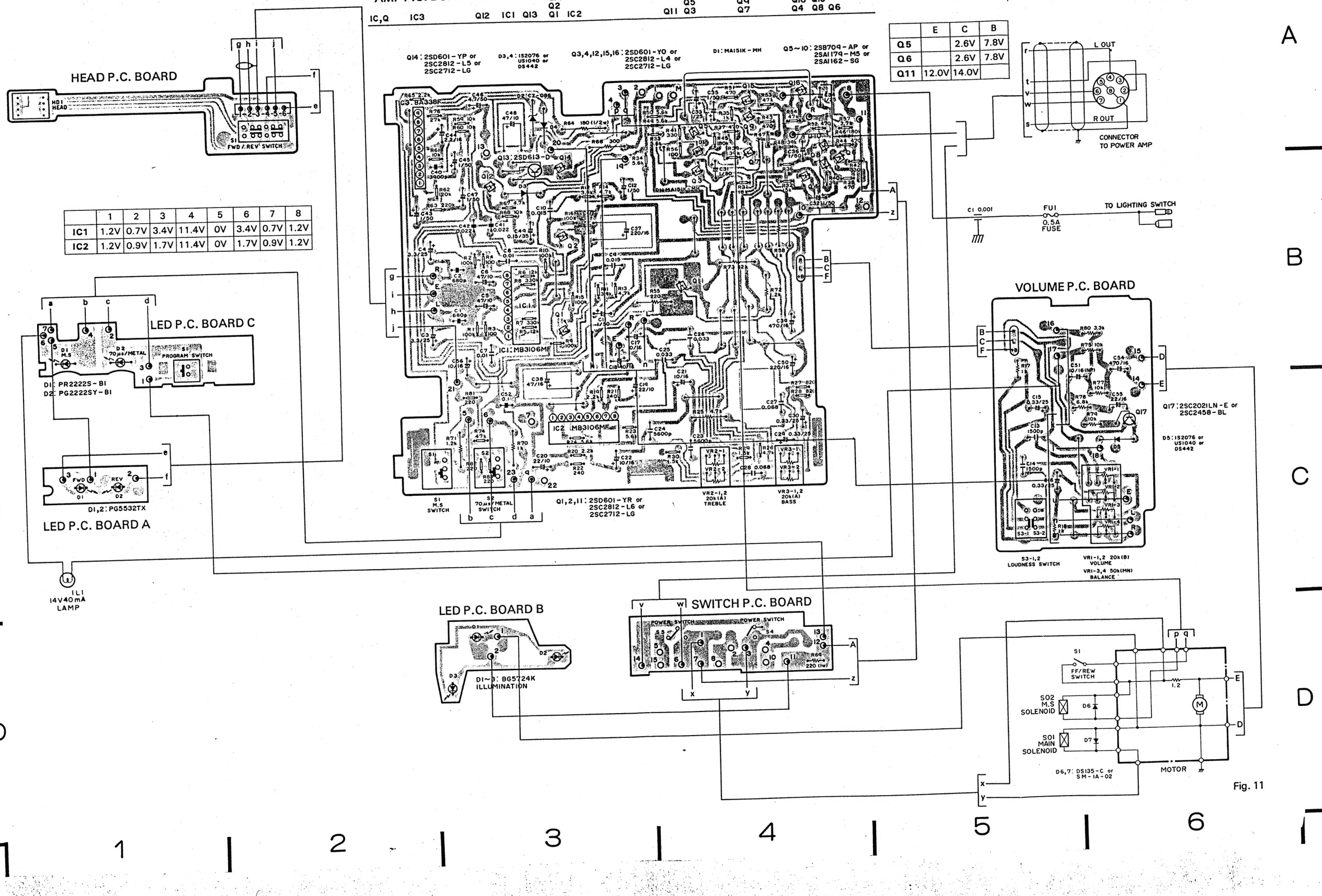
◎ LED P.C. BOARD C
- S1: PROGRAM SWITCH ···· ON – OFF

◎ MISCELLANEOUS
- S1: FF/REW SWITCH ····· PLAY – FF/REW

The underlined indicates the switch position.

Fig. 10

4. CONNECTION DIAGRAM (KP-313G)

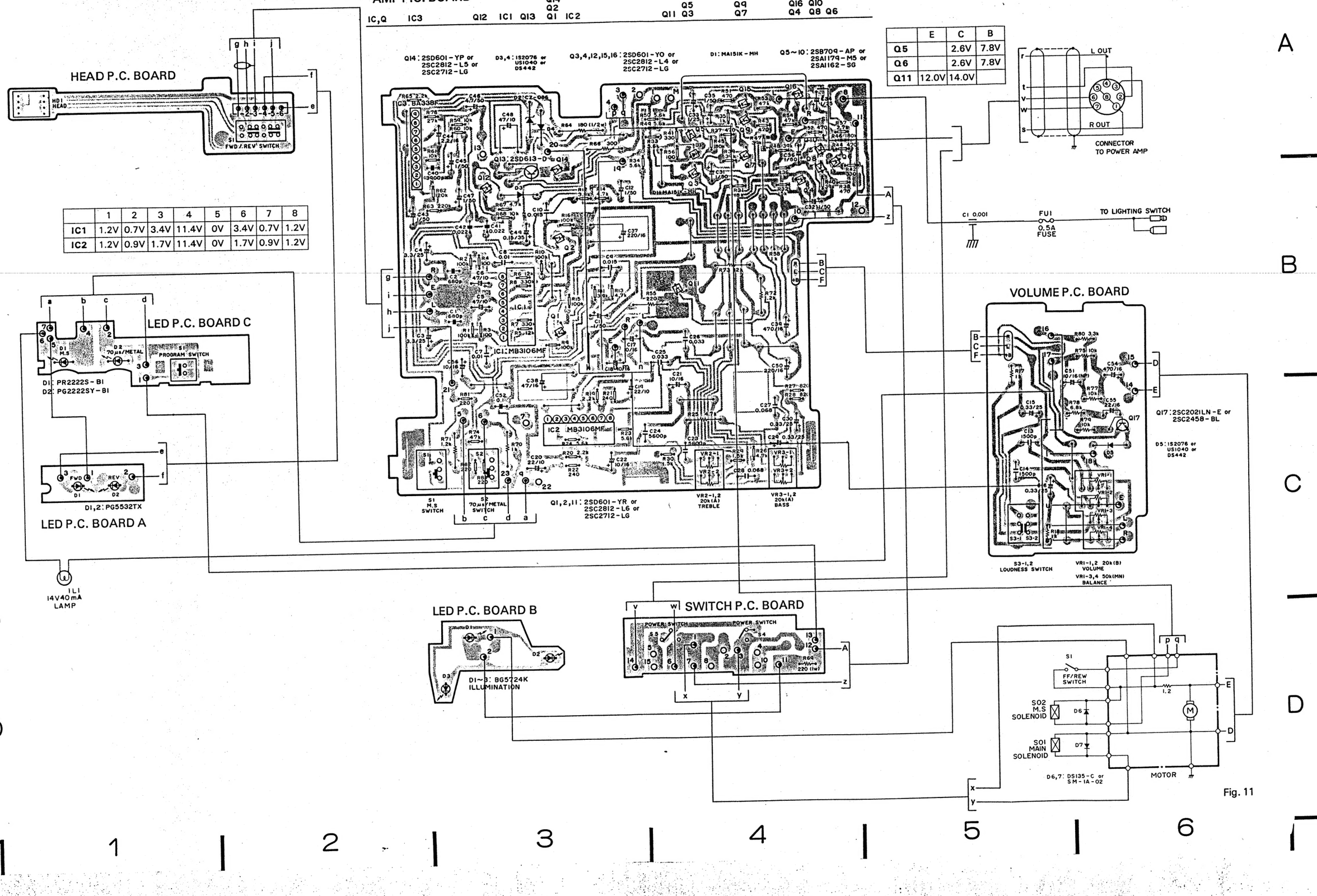


	E	C	B
Q5		2.6V	7.8V
Q6		2.6V	7.8V
Q11	12.0V	14.0V	

	1	2	3	4	5	6	7	8
IC1	1.2V	0.7V	3.4V	11.4V	0V	3.4V	0.7V	1.2V
IC2	1.2V	0.9V	1.7V	11.4V	0V	1.7V	0.9V	1.2V

Fig. 11

4. CONNECTION DIAGRAM (KP-313G)

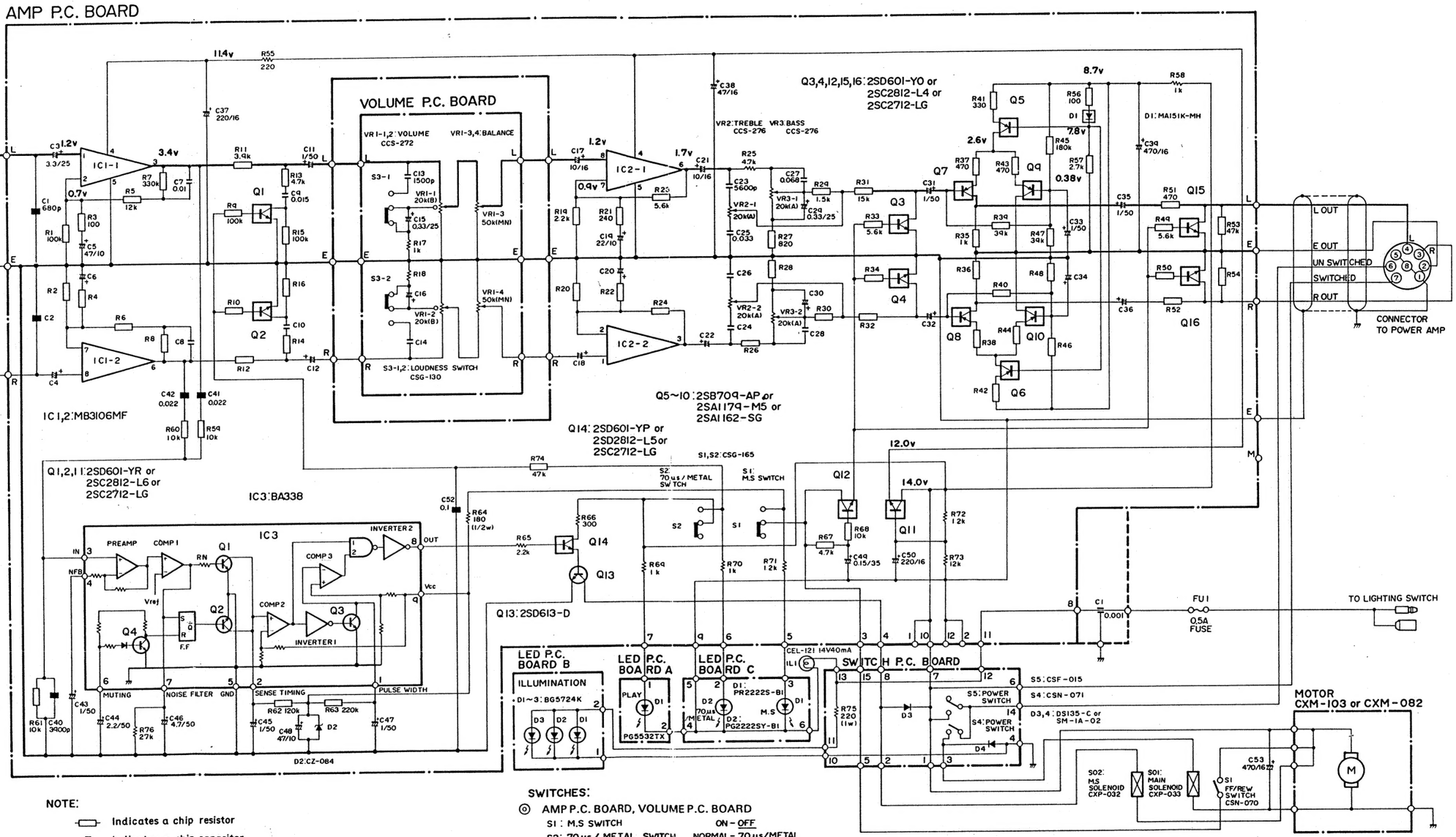


	1	2	3	4	5	6	7	8
IC1	1.2V	0.7V	3.4V	11.4V	0V	3.4V	0.7V	1.2V
IC2	1.2V	0.9V	1.7V	11.4V	0V	1.7V	0.9V	1.2V

	E	C	B
Q5		2.6V	7.8V
Q6		2.6V	7.8V
Q11	12.0V	14.0V	

Fig. 11

5. SCHEMATIC CIRCUIT DIAGRAM (KP-212G)



NOTE:

- Indicates a chip resistor
- Indicates a chip capacitor
- Indicates a chip transistor
- Indicates a chip diode

SWITCHES:

◎ AMP P.C. BOARD, VOLUME P.C. BOARD
- S1 : M.S SWITCH — ON – OFF
- S2: 70μs / METAL SWITCH — NORMAL – 70μs/METAL
- S3: LOUDNESS SWITCH — ON – OFF

◎ SWITCH P.C. BOARD
- S4,5:POWER SWITCH — ON – OFF

◎ MISCELLANEOUS
- S1: FF/REW SWITCH — PLAY – FF/REW

The underlined indicates the switch position.

Fig. 12

6. CONNECTION DIAGRAM (KP-212G)

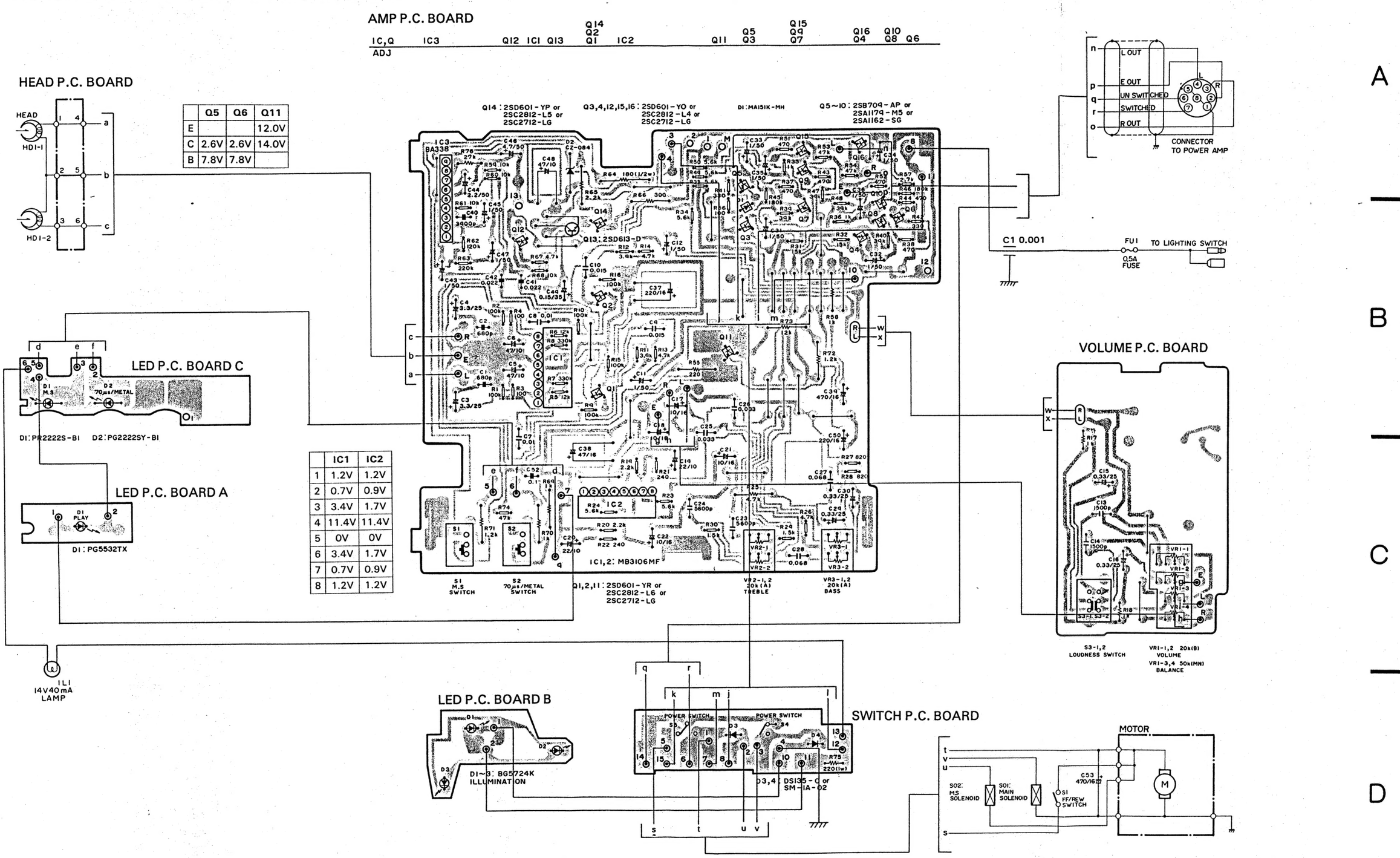


Fig. 13

• IC's and Transistors

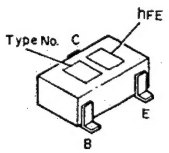
2SD601
2SC2812
2SC2712
2SB709
2SA1179
2SA1162

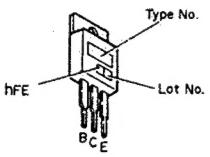
2SD613

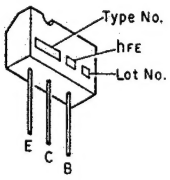
2SC2021LN

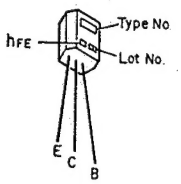
-

2SC2458



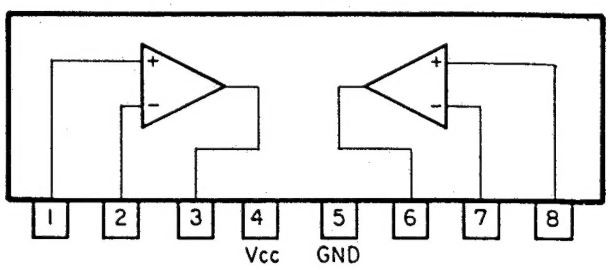




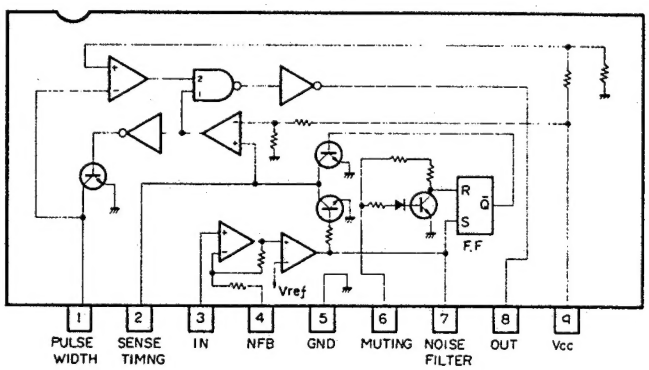


Part No.	Indication (Type No., hFE)
2SC2812-L4	L4
2SC2812-L5	L5
2SC2812-L6	L6
2SC2812-L7	L7
2SC2712-LG	LG
2SC2712-LL	LL
2SC2712-LO	LO
2SC2712-LY	LY
2SD601-YO	YO
2SD601-YP	YP
2SD601-YQ	YQ
2SD601-YR	YR
2SD601-YS	YS
2SA1162-SG	SG
2SA1162-SY	SY
2SB709-AP	AP
2SB709-AQ	AQ
2SB709-AR	AR
2SB709-AS	AS
2SA1179-M5	M5
2SA1179-M6	M6
2SA1179-M7	M7

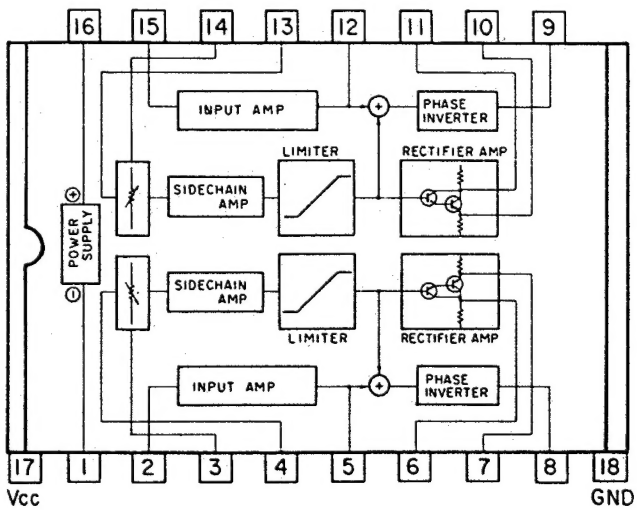
MB3106MF



BA338



HA11226



7. EXPLODED VIEW (KP-212G)

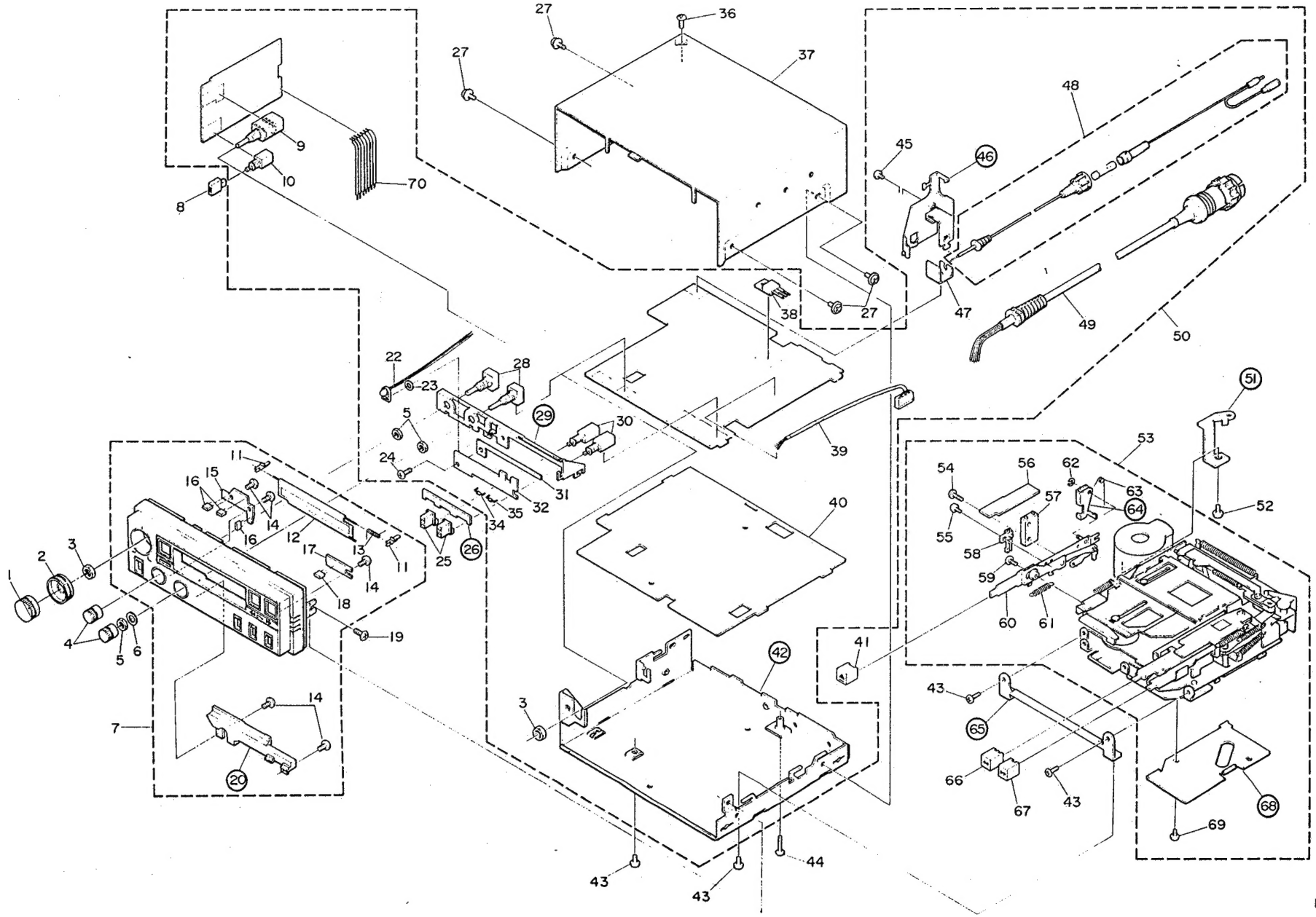


Fig. 14

Parts List (KP-212G)

NOTE:

- *For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.*
  ★★: GENERALLY MOVES FASTER THAN ★.
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- *Parts whose parts numbers are omitted are subject to being not supplied.*

Mark	No.	Part No.	Description
★	1.	CAA-393	Knob (VOLUME)
★	2.	CAA-394	Knob (BALANCE)
★	3.	CBA-067	Nut (M7)
	4.	CAA-344	Knob (BASS, TREBLE)
	5.	CBA-066	Nut (M6)
	6.	CBF-091	Washer (M6)
	7.	CXC-784	Grille Assy
★	8.	CAC-351	Button (LOUDNESS)
★★	9.	CCS-272	Volume, 20kΩ(B), 50kΩ(MN) (VOLUME, BALANCE)
★★	10.	CSG-130	Switch (LOUDNESS)
	11.	CNF-207	Holder
	12.	CAT-140	Door
	13.	CBH-656	Spring
	14.	BNZ20P050FMC	Screw
	15.	CNL-262	P.C. Board
★	16.	BG5724K	LED
	17.	CNL-261	P.C. Board
★	18.	PG5532TX	LED
	19.	BMF30P050FMC	Screw
	20.		Lens
	21.	VACANT	
	22.	CEL-121	Lamp, 14V 40mA
	23.	HBF-139	Washer
	24.	BMZ26P050FMC	Screw
★	25.	CAA-527	Button (70μs/METAL, M.S)
	26.		Cover
	27.	BMN30P050FZK	Screw
★★	28.	CCS-276	Volume, 20kΩ(A) (BASS, TREBLE)
	29.		Holder
★★	30.	CSG-165	Switch (70μs/METAL, M.S)
	31.		Insulator
	32.	CNL-264	P.C. Board
	33.	VACANT	
★	34.	PG2222SY-B1	LED
★	35.	PR2222S-B1	LED
	36.	CBA-110	Screw
	37.	CNB-706	Case
★★	38.	2SD613	Transistor
	39.	CDE-900	Connector
	40.	CNM-692	Insulator
★	41.	CAC-528	Button (EJECT)
	42.		Chassis
	43.	BMZ26P040FMC	Screw
	44.	BMZ26P120FMC	Screw
	45.	BMZ30P040FMC	Screw
	46.		Holder
	47.	CCL-115	Feed through Capacitor
	48.	CDE-879	Cord
	49.	CDE-880	Cord
	50.	CWK-299	Amp Assy
	51.		Bracket
	52.	BMZ26P030FMC	Screw
	53.	CXC-753	Cassette Mechanism Assy
	54.	CBA-106	Scrw
	55.	BMZ20P040FMC	Screw
	56.	CNL-274	P.C. Board
★★	57.	CSF-015	Switch
★★	58.	CSN-071	Switch
	59.	BMZ23P090FMC	Screw
	60.	CXC-744	Bracket
	61.	CBH-650	Spring
	62.	YE15FUC	Washer
	63.	CBH-680	Spring
	64.		Arm
	65.		Bracket
★	66.	CAC-530	Button (REW)
★	67.	CAC-529	Button (FF)
	68.		Cover
	69.	BMZ23P030FMC	Screw
	70.	CDE-982	Connector

8. EXPLODED VIEW (KP-313G)

Mark	No.	Part No.	Description
★	1.	CAA-393	Knob (VOLUME)
★	2.	CAA-394	Knob (BALANCE)
	3.	CBA-067	Nut (M7)
★	4.	CAA-344	Knob (BASS, TREBLE)
	5.	CBA-066	Nut (M6)
	6.	CBF-091	Washer (M6)
	7.	CNF-207	Holder
	8.	CAT-141	Door
	9.	CBH-656	Spring
	10.	BNZ20P050FMC	Screw
	11.	CNL-262	P.C. Board
★	12.	BG5724K	LED
	13.	CNL-260	P.C. Board
★	14.	PG5532TX	LED
	15.		Lens
	16.	BMF30P050FMC	Screw
	17.	CXC-785	Grille Assy
★★	18.	CCS-272	Volume, 20kΩ(B), 50kΩ(MN) (VOLUME, BALANCE)
★★	19.	CSG-130	Switch (LOUDNESS)
★	20.	CAC-351	Button (LOUDNESS)
	21.	VACANT	
	22.	CDF-296	Connector
	23.	CEL-121	Lamp, 14V 40mA
	24.	HBF-139	Washer
★★	25.	CCS-276	Volume, 20kΩ(A) (BASS, TREBLE)
	26.		Holder
★★	27.	CSG-165	Switch (70μs/METAL, M.S)
	28.		Insulator
	29.	CNL-263	P.C. Board
	30.	BMZ26P050FMC	Screw
	31.		Cushion
★★	32.	CSG-176	Switch (PROGRAM)
	33.		Holder
★	34.	CAC-531	Button (PROGRAM)
★	35.	CAC-527	Button (70μs/METAL, M.S)
★	36.	PG2222SY-B1	LED
★	37.	PR2222S-B1	LED
	38.		Cover

Mark	No.	Part No.	Description
	39.	BMN30P050FZK	Screw
	40.	CBA-110	Screw
	41.	CNB-706	Case
★★	42.	2SD613	Transistor
	43.	CDF-249	Connector
	44.	CNM-692	Insulator
	45.		Chassis
	46.	BMZ26P040FMC	Screw
	47.	BMZ26P120FMC	Screw
	48.	BMZ30P040FMC	Screw
	49.		Holder
	50.	CDE-879	Cord
	51.	CCL-115	Feed through Capaci
	52.	CDE-880	Cord
	53.	CWK-300	Amp Assy
	54.		Bracket
	55.	CXC-771	Cassette Mechanism
	56.	BMZ26P030FMC	Screw
	57.	CNL-274	P.C. Board
	58.	CBA-106	Screw
	59.	BMZ20P040FMC	Screw
	60.	YE15FUC	Washer
	61.	CBH-680	Spring
	62.		Arm
★★	63.	CSF-015	Switch
★★	64.	CSN-071	Switch
	65.	BMZ23P090FMC	Screw
	66.	CXC-744	Bracket Unit
	67.	CBH-650	Spring
	68.		Bracket
★	69.	CAC-528	Button (EJECT)
★	70.	CAC-530	Button
★	71.	CAC-529	Button
	72.		Bracket

9. ELECTRICAL PARTS LIST

NOTE:

When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω	*56×10^1*	*561*	*RD1/4PS 5 6 1 J*
47kΩ	*47×10^3*	*473*	*RD1/4PS 4 7 3 J*
0.5Ω	*0R5*		*RN2H 0 R 5 K*
1Ω	*010*		*RS1P 0 1 0 K*

Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ	*562×10^1*	*RN1/4SR 5 6 2 1 F*

- *For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.*
  ★★: GENERALLY MOVES FASTER THAN ★.
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- *Parts whose parts numbers are omitted are subject to being not supplied.*

Volume P.C. Board (KP-313G)

MISCELLANEOUS

Mark	Part No.	Symbol & Description	
★★	2SC2021LN or 2SC2458	Q17	
★	1S2076 or US1040 or DS442	D5	
★★	CCS-272	VR1	Volume, 20kΩ(B), 50kΩ(MN) (VOLUME, BALANCE)
★★	CSG-130	S3	Switch (LOUDNESS)

RESISTORS

Mark	Part No.	Symbol & Description
	RD1/4VM□□□J	R17, R18, R75, R77 — R80

CAPACITORS

Mark	Part No.	Symbol & Description	
	CQMA152J50	C13, C14	
	CSYAR33M25SAN	C15, C16	
	CEA100M16NP	C51	
	CEA471M16L	C54	
	CCH-065	C55	22μF/16V

Volume P.C. Board (KP-212G)

Mark	Part No.	Symbol & Description	
★★	CSG-130	S3	Switch (LOUDN
★★	CCS-272	VR1	Volume, 20kΩ(I 50kΩ(MN) (VOLUME, BAL
	RD1/4VM□□□J	R17, R18	
	CQMA152J50	C13, C14	
	CSYAR33M25SAN	C15, C16	

CAPACITORS

Mark	Part No.	Symbol & Description
	CKSYB681K50	C1, C2 Chip Capacitor
	CEANL3R3M25L	C3, C4
	CCH-066	C5, C6, C48 47μF/10V
	CQMA103J50	C7, C8
	CQMA153J50	C9, C10
	CCH-060	C11, C12, C31, C32, C33 (KP-212G), C34 – C36, C43, C45, C47 1μF/50V
	CCH-063	C17, C18, C21, C22, C56 (KP-313G) 10μF/16V
	CCH-064	C19, C20 22μF/10V
	CQMA562J50	C23, C24
	CQMA333J50	C25, C26
	CQMA683J50	C27, C28
	CSYAR33M25SAN	C29, C30
	CSZA010M25	C33 (KP-313G)
	CEA221M16L	C37, C50
	CEA470M16L	C38
	CEA471M16L	C39
	CKSYB392K50	C40 Chip Capacitor
	CKSYF223Z50	C41, C42 Chip Capacitor
	CCH-061	C44 2.2μF/50V
	CCH-062	C46 4.7μF/50V
	CSZAR15M35	C49
	CKSYF104Z25	C52 Chip Capacitor

LED P.C. Board A (KP-212G)

Mark	Part No.	Symbol & Description
★	PG5532TX	D1 LED

LED P.C. Board A (KP-313G)

Mark	Part No.	Symbol & Description
★	PG5532TX	D1, D2 LED

LED P.C. Board B

Mark	Part No.	Symbol & Description
★	BG5724K	D1 – D3 LED

LED P.C. Board C

Mark	Part No.	Symbol & Description
★	PR2222S-B1	D1 LED
★	PG2222SY-B1	D2 LED
★★	CSG-176	S1 (KP-313G) Switch (PROGRAM)

Switch P.C. Board (KP-313G)

Mark	Part No.	Symbol & Description
★★	CSN-071	S4 Switch (POWER)
★★	CSF-015	S5 Switch (POWER)
	RS1P□□□J	R69

Switch P.C. Board (KP-212G)

Mark	Part No.	Symbol & Description
★	DS135 or SM-1A-02	D3, D4
★★	CSN-071	S4 Switch (POWER)
★★	CSF-015	S5 Switch (POWER)
	RS1P□□□J	R75

Head P.C. Board (KP-313G)

Mark	Part No.	Symbol & Description
★★	CSH-070	S1 Switch (FWD/REV)
★★	CPB-066	HD1 Head

Miscellaneous Parts List

Mark	Part No.	Symbol & Description
★	DS135 or SM-1A-02	D6 (KP-313G), D7 (KP-313G)
	CCL-115	C1 Feed through Capacitor
	CEA471M16L	C53 (KP-212G)
★★	CSN-070	S1 Switch (FF/REW)
	CEL-121	IL1 Lamp, 14V 40mA
★★	CXM-103 or CXM-082	M (KP-212G) Motor
★★	CXM-106	M (KP-313G) Motor
★	CXP-033	SO1 (KP-212G) Solenoid
★	CXP-035	SO1 (KP-313G) Solenoid
★	CXP-032	SO2 (KP-212G) Solenoid
★	CXP-034	SO2 (KP-313G) Solenoid
★★	CPB-064 or CPB-065	HD1 (KP-212G) Head